

MARINE RECREATIONAL INFORMATION PROGRAM

FY Project Plan

Pilot project; Validation Methods for Headboat Logbooks

Created on

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1. Overview

1.1. Background

The National Research Council's independent review (NRC, 2006) recommended "charter, party, and other for-hire recreational fishing operations should be required to maintain logbooks of fish landed and kept as well as fish caught and released". Further, the report states these logbooks should be "verifiable" since unknown biases in the estimators from surveys arise from reliance on unverified assumptions. In order to address this issue, the NRC recommended that those "assumptions should be examined and verified so that biases can be properly evaluated". In the case of the headboat fishery, the Southeast Region Headboat Survey (SRHS) has used logbooks since its inception in 1972. In conjunction with the headboat logbook, a dockside sampling component was also established during the initial design of the program. The objectives of dockside sampling are two-fold; 1) collect biological information, including lengths, weights, and biological samples from the catch, and 2) validate information reported on the logbooks.

Historically, the SRHS has focused primarily on verifying fishing effort. A variety of methods are used to verify numbers of trips taken and numbers of anglers on board. That information is used to calculate an expansion factor (estimated total angler days/reported angler days) to account for the effort on unreported trips and to correct for mis-reporting of anglers per trip.

Current SRHS dockside sampling focuses on obtaining biological information for estimating average weight and for determining the age composition of the landings. The survey relies on port samplers to maintain a systematic distribution of sampling in an opportunistic/cooperative setting rather than using a probabilistic approach. Given this current sampling design of opportunistic sub-sampling of individual trips with voluntary angler participation, it is not possible to either verify the self-reported logbook data or generate independent total catch estimates.

The need to verify self reported catch information becomes a priority as fisheries management shifts towards bag limits and quotas. The current system incentivizes captains to under report landings in order to lengthen fishing seasons.

The SRHS is currently completing an MRIP funded project to develop probability based methods for trip/sample selection. The next logical component of improved headboat catch estimates is verification of self-reported log book catches. The SRHS requests funds to develop and test probability based methods of dockside catch verification.

1.2. Project Description

The project will focus on determining and developing preferred methods for 1) verifying self-reported catch reports (both harvest and at sea discards (live and dead) and 2) expanding the

reported data into statistically valid estimates total harvest and discards. We anticipate that this project will build on the conclusions drawn from the MRIP charter boat logbook pilot project in parts of Florida and Texas which compared information from dockside angler interviews and captains electronic log books (Kaiser, M. 2011.)

We will use two consultants to develop both dockside sampling designs and expanded estimation procedures. The sampling design component will focus on angler selection, particularly at dockside.

The program will consist of two components: 1) dockside verification and estimation and 2) a collaborative component for at-sea verification and estimation of discards. The dockside sampling component will evaluate alternative sampling approaches such as conventional interviews and camera based approaches for fish counts. Information collected at dockside will include those categories present on the logbook and filled in by the captain. Geographic coverage of dockside sampling will be restricted to three landing areas where extra samplers are requested (southeast Florida, southwest Florida and northeast Texas).

The at sea component will collaborate with the MRIP and Florida through the overlapping ranges of the programs (North Carolina through the Florida Keys for MRIP-SRHS and the Tampa Bay area for the Florida Fish and Wildlife Commission program and SRHS.) The information from those programs will be used primarily in the verification of discards reported in captain's log books.

Where the dockside verification sampling occurs, the utility of the dockside and at-sea sampling for verification will be investigated and estimation approaches using the log books, dockside and at-sea reports will be studied. In the areas where only at sea observers are deployed, the at-sea sampling will be compared to log books for verification and estimation approach based on those two sources will be studied.

Different estimation approaches will be examined. These will include variations on the current system in which logbook reported landings are assumed known and estimates are made of landings from un-reported trips. Statistical approaches will be used to account for possible bias on reported trips and different estimation approaches including some similar to the model based estimators described in Kaiser 2011 will be investigated for use with the estimated proportions of the catches.

1.3. Objectives

1. Design probability based sampling methods.
2. Test dockside validation methods and protocols
3. Develop imputation and estimation procedures using 1) only dockside sampling for landings

estimation and 2) both dockside and self-reported log book data for landings estimation.

4. Develop imputation and estimation procedures using 1) only at-sea sampling for discard estimation and 2) both at-sea-sampling and self-reported log book data for discard estimation.

1.4. References

NRC (National Research Council). 2006. Review of Recreational Fisheries Survey Methods. National Academies Press, Washington, D.C. Kaiser, M 2011. Charter-Boat Logbook Reporting Pilot Study Initial Examination of Data.

2. Methodology

2.1. Methodology

Using a probability based sampling approach; each validation method will be tested to determine its feasibility and merit. Sampling will be conducted using 2 port agents per location in order to effectively collect information from the entire vessel trip. This would include enumeration of anglers and species in the catch. Methods being considered include 1) photographing each angler's catch on a white board as they disembark the vessel. Photos would then be downloaded and viewed and enumerated afterwards. 2) Subsets of anglers would be interviewed for species totals and discard information 3) MRIP At-sea information will be used to verify angler totals, trip duration, species composition and discards.

It is possible that additional samplers will be needed to adequately sample anglers from vessels which can carry large numbers of anglers. The possibility that additional samplers will be needed for trips with larger numbers of anglers will be investigated through the use of additional NOAA Fisheries samplers in limited times and areas

Information from each approach will be compared to self reported logbook data for corresponding trips to determine the reliability of the logbook data. Additional analysis will be conducted to examine correction factors, developing catch estimates from dockside sampling, and estimated cost of implementation for each method.

2.2. Regions

2.3. Geographic Coverage

Fort Pierce to Miami, FL (SEFL), Naples to Cedar Key, FL (SWFL), ; Sabine Pass to Port Aransas, TX

2.4. Temporal Coverage

June 1, 2012 to June 1, 2013

2.5. Frequency

Daily\weekly sampling (52 weeks)

2.6. Unit of Analysis

Headboat trip

2.7. Collection Mode

Dockside interviews and At-sea sampling aboard headboats

3. Communications Plan

3.1. Internal

Project Team members involved with weekly sampling schedules and port agent duties will communicate in some cases on a daily basis via email or phone. The entire project team will communicate on a monthly basis with a scheduled conference call to review progress and discuss any issues affecting the project. Monthly sampling results will be prepared and available to Team members as a shared document via email or by using the MRIP collaboration tool.

3.2. External

The Project Team will provide a monthly report to the MRIP Operations Team to outline the progress related to the milestones and deliverables of the project. This report will point out any concerns or issues that may impact the project. Upcoming activities will be included in the report, along with any follow up items related to the project. If necessary the Project Team will request a conference call with the Operations Team to discuss any issues significantly impacting the project. Results of the project will be in the form of a final peer reviewed report.

4. Assumptions and Constraints

4.1. New Data

Yes

4.2. Track Costs

4.3. Funding Vehicle

MRIP Operations Team

4.4. Data Resources

Southeast Region Headboat Survey and MRIP At-sea Survey

4.5. Other Resources

The sampling designs used for this project will require input from NOAA Fisheries Service analysts and two private consultants. The project will be based on the collaboration of these experts to develop objective and statistically defensible methods prior to testing.

This project will require coordination with headboat operations beyond the current SRHS dockside intercept sampling protocol. Preliminary discussions of designs indicate the need to enumerate entire headboat catches, interview subsets of anglers and possibly other more time consuming approaches. The ability to enumerate the entire headboat catch dockside and interview a subset of anglers will pose some hurdles depending on the number of passengers, the layout of the dock and offloading conditions, and the willingness of anglers and headboat crews to be helpful. We assume that two samplers will be able to accomplish the landings verification component, though the validity of that assumption will be tested. Several methods for enumerating the entire catch will be considered for testing.

Impacts on headboat operations will subsequently increase compared to the current sampling protocol. This will be minimized as much as possible by communicating and coordinating sampling efforts with the captains on a regular basis.

The variance estimates associated with the dockside sampling based estimates of total catch will be dictated by the number of trips that can be intercepted and the number of anglers that can be intercepted from those trips. The number of trips that can be intercepted by two port samplers will

largely be determined by the amount of time it takes to travel to a given port and how long it takes to complete the dockside sampling. This is difficult to predict, but will be an important metric derived from this study.

4.6. Regulations

50 CFR part 622.4 and part 622.5 (b) Charter vessel/headboat owners and operators—

(1) Coastal migratory pelagic fish, reef fish, snapper-grouper, and Atlantic dolphin and wahoo. The owner or operator of a vessel for which a charter vessel/headboat permit for Gulf coastal migratory pelagic fish, South Atlantic coastal migratory pelagic fish, Gulf reef fish, South Atlantic snapper-grouper, or Atlantic dolphin and wahoo has been issued, as required under § 622.4(a)(1), or whose vessel fishes for or lands such coastal migratory pelagic fish, reef fish, snapper-grouper, or Atlantic dolphin or wahoo in or from state waters adjoining the applicable Gulf, South Atlantic, or Atlantic EEZ, and who is selected to report by the SRD, must maintain a fishing record for each trip, or a portion of such trips as specified by the SRD, on forms provided by the SRD and must submit such record as specified in paragraph (b)(2) of this section.

4.7. Other

5. Risk

5.1. Project Risk

Table 1: Project Risk

Risk Description	Risk Impact	Risk Probability	Risk Mitigation Approach
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6. Final Deliverables

6.1. Additional Reports

Peer reviewed final report and associated metadata records

6.2. New Data Sets

Correction factor for headboat logbook estimates

6.3. New Systems

Imputation procedures for headboat logbook catch and effort

7. Project Leadership

7.1. Project Leader and Members

Table 2: Project Members

Project Role	Name	Organization	Title
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8. Project Estimates

8.1. Project Schedule

Table 3: Project Schedule - Major Tasks and Milestones

#	Schedule Description	Planned Start	Planned Finish	Prerequisites	Milestones
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8.2. Cost Estimates

Table 4: Cost Estimates

Project Need	Cost Description	Date Needed	Estimated Cost
TOTAL			\$0.00